

ABSTRACT

This research aimed to check the impact of high fat diet and gut microbiota in development of metabolic endotoxemia using mouse as a research model. For this purpose, bacteria were isolated from 10 obese human fecal samples. 22 strains were isolated and morphologically and biochemically characterized. Biochemical characterization showed that *Enterobacter*, *Escherichia* and *Bacteriodes* species were abundant genera in obese patients. In vivo trial was performed to explore the effect of isolated bacterial species on lab experimental mice. For this purpose mice were divided into four groups. Group 1 (control) were fed with chow diet, group 2 mice were fed with high fat diet, group 3 mice were fed with high fat diet + gut microbiota inoculum and group 4 mice were fed with chow diet and gut microbiota inoculum. The total time period for the experiment was 03 months. Blood and cecal contents were collected from sacrificed mice at the end of the experiment. Measurement of BMI and biochemical testing of blood endotoxins of experimental mice was done. The BMI of group 1, group 2 and group 4 are non-significant whereas group 3 BMI is significant. In the same way group 2, 3, 4 have significant endotoxins level where as group 1 have non-significant endotoxins level. The result of the study indicates that the groups of mice treated with high fat diet and bacterial inoculum have an increased level of endotoxins in the blood. This study confirmed that high fat and gut microbiota have a great impact in development of metabolic disorders by disturbing the delicate balance of the gut microbes.